

1. Work requester fills out this section.

☐ Standing Work Permit

Requester: Don Lynch	Date: 6/23/2011	Ext.: 2253	Dept/Div/Group: PO/PHENIX
Other Contact person (if different from requester): Carter Biggs		Ext.: 7515	
Work Control Coordinator: Don Lynch	Start Date: 6/29/2011	Est. End Date: 12/1/2011	
Brief Description of Work: Prepare the PHENIX IR for shutdown 2011 maintenance and upgrade tasks			
Building: 1008	Room: AH & IR, tunnel N & S	Equipment: PHENIX Detector	Service Provider: PHENIX Techs

2. WCC, Requester/Designee, Service Provider, and ESS&H (as necessary) fill out this section or attach analysis

ESS&H ANALYSIS				
Radiation Concerns	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Activation	<input type="checkbox"/> Airborne	<input type="checkbox"/> Contamination
	<input type="checkbox"/> Radiation	<input type="checkbox"/> Other		
<input type="checkbox"/> Special nuclear materials involved, notify Isotope Special Materials Group		<input type="checkbox"/> Fissionable materials involved, notify Laboratory Criticality Officer		
Radiation Generating Devices:	<input type="checkbox"/> Radiography	<input type="checkbox"/> Moisture Density Gauges	<input type="checkbox"/> Soil Density Gauges	<input type="checkbox"/> X-ray Equipment
Safety and Security Concerns	<input type="checkbox"/> None	<input type="checkbox"/> Explosives	<input type="checkbox"/> Transport of Haz/Rad Material	
<input type="checkbox"/> Adding/Removing Walls or Roofs	<input checked="" type="checkbox"/> Critical Lift	<input type="checkbox"/> Fumes/Mist/Dust*	<input checked="" type="checkbox"/> Magnetic Fields*	<input checked="" type="checkbox"/> Pressurized Systems
<input type="checkbox"/> Asbestos*	<input checked="" type="checkbox"/> Cryogenic	<input type="checkbox"/> Heat/Cold Stress	<input type="checkbox"/> Nanomaterials/particles*	<input type="checkbox"/> Railroad Work
<input type="checkbox"/> Beryllium*	<input type="checkbox"/> Electrical	<input checked="" type="checkbox"/> Hydraulic	<input type="checkbox"/> Noise*	<input checked="" type="checkbox"/> Rigging
<input type="checkbox"/> Biohazard*	<input checked="" type="checkbox"/> Elevated Work	<input type="checkbox"/> Lasers*	<input type="checkbox"/> Non-ionizing Radiation*	<input type="checkbox"/> Security Concerns
<input type="checkbox"/> Chemicals/Corrosives*	<input type="checkbox"/> Excavation	<input type="checkbox"/> Lead*	<input checked="" type="checkbox"/> Oxygen Deficiency*	<input type="checkbox"/> Suspect/Counterfeit Items
<input checked="" type="checkbox"/> Confined Space*	<input type="checkbox"/> Ergonomics*	<input checked="" type="checkbox"/> Material Handling	<input type="checkbox"/> Penetrating Fire Walls	<input type="checkbox"/> Vacuum
* Industrial Hygiene (IH) Review Required				<input type="checkbox"/> Other
Environmental Concerns	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Work impacts Environmental Permit No.		
<input type="checkbox"/> Atmospheric Discharges (rad/non-rad)	<input type="checkbox"/> Land Use Institutional Controls	<input type="checkbox"/> Soil Activation/contamination	<input type="checkbox"/> Waste-Mixed	
<input type="checkbox"/> Chemical or Rad Material Storage or Use	<input type="checkbox"/> Liquid Discharges	<input type="checkbox"/> Waste-Clean	<input type="checkbox"/> Waste-Radioactive	
<input type="checkbox"/> Cesspools (UIC)	<input type="checkbox"/> Oil/PCB Management	<input type="checkbox"/> Waste-Hazardous	<input type="checkbox"/> Waste-Regulated Medical	
<input type="checkbox"/> High water/power consumption	<input type="checkbox"/> Spill potential	<input type="checkbox"/> Waste-Industrial	<input type="checkbox"/> Underground Duct/Piping	
Waste disposition by:				<input type="checkbox"/> Other
Pollution Prevention (P2)/Waste Minimization Opportunity:		<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes		
FACILITY CONCERNS	<input type="checkbox"/> None			
<input type="checkbox"/> Access/Egress Limitations	<input type="checkbox"/> Electrical Noise	<input type="checkbox"/> Potential to Cause a False Alarm	<input type="checkbox"/> Vibrations	
	<input type="checkbox"/> Impacts Facility Use Agreement	<input type="checkbox"/> Temperature Change	<input type="checkbox"/> Other	
<input type="checkbox"/> Configuration Control	<input type="checkbox"/> Maintenance Work on Ventilation Systems	<input type="checkbox"/> Utility Interruptions		
WORK CONTROLS				
Work Practices				
<input type="checkbox"/> None	<input type="checkbox"/> Exhaust Ventilation	<input checked="" type="checkbox"/> Lockout/Tagout	<input type="checkbox"/> Spill Containment	<input type="checkbox"/> Security (see Instruction Sheet)
<input checked="" type="checkbox"/> Back-up Person/Watch	<input type="checkbox"/> HP Coverage	<input type="checkbox"/> Posting/Warning Signs	<input type="checkbox"/> Time Limitation	<input type="checkbox"/> Other
<input type="checkbox"/> Barricades	<input checked="" type="checkbox"/> IH Survey	<input checked="" type="checkbox"/> Scaffolding-requires inspection	<input type="checkbox"/> Warning Alarm (i.e. "high level")	
Personal Protective Equipment				
<input type="checkbox"/> None	<input type="checkbox"/> Ear Plugs	<input checked="" type="checkbox"/> Gloves	<input type="checkbox"/> Lab Coat	<input checked="" type="checkbox"/> Safety Glasses
<input type="checkbox"/> Coveralls	<input type="checkbox"/> Ear Muffs	<input type="checkbox"/> Goggles	<input type="checkbox"/> Respirator*	<input checked="" type="checkbox"/> Safety Harness
<input type="checkbox"/> Disposable Clothing	<input type="checkbox"/> Face Shield	<input checked="" type="checkbox"/> Hard Hat	<input type="checkbox"/> Shoe Covers	<input checked="" type="checkbox"/> Safety Shoes <input type="checkbox"/> Other
Permits Required (Permits must be valid when job is scheduled.)				
<input type="checkbox"/> None	<input type="checkbox"/> Cutting/Welding	<input type="checkbox"/> Impair Fire Protection Systems		
<input type="checkbox"/> Concrete/Masonry Penetration	<input type="checkbox"/> Digging/Core Drilling	<input type="checkbox"/> Rad Work Permit-RWP No		
<input checked="" type="checkbox"/> Confined Space Entry	<input type="checkbox"/> Electrical Working Hot	<input type="checkbox"/> Other		
Dosimetry/Monitoring				
<input type="checkbox"/> None	<input type="checkbox"/> Heat Stress Monitor	<input type="checkbox"/> Real Time Monitor	<input checked="" type="checkbox"/> TLD	
<input type="checkbox"/> Air Effluent	<input type="checkbox"/> Noise Survey/Dosimeter	<input type="checkbox"/> Self-reading Pencil Dosimeter	<input type="checkbox"/> Waste Characterization	
<input type="checkbox"/> Ground Water	<input checked="" type="checkbox"/> O ₂ /Combustible Gas	<input type="checkbox"/> Self-reading Digital Dosimeter	<input type="checkbox"/> Other	
<input type="checkbox"/> Liquid Effluent	<input type="checkbox"/> Passive Vapor Monitor	<input type="checkbox"/> Sorbent Tube/Filter Pump		
Training Requirements (List specific training requirements)				
PHENIX Awareness, C-A Access, (where appropriate: Crane Operator, Confined Space, Rad Worker I, Fork lift Operator, Working at heights, Electrical Safety I, LOTO)				
Based on analysis above, the Walkdown Team determines the risk, complexity, and coordination ratings below:			If using the permit when all hazard ratings are low, only the following need to sign: (Although allowed, there is no need to use back of form)	
ESS&H Risk Level:	<input checked="" type="checkbox"/> Low <input type="checkbox"/> Moderate <input type="checkbox"/> High	WCC: _____ Date: _____		
Complexity Level:	<input checked="" type="checkbox"/> Low <input type="checkbox"/> Moderate <input type="checkbox"/> High	Service Provider: _____ Date: _____		
Work Coordination:	<input checked="" type="checkbox"/> Low <input type="checkbox"/> Moderate <input type="checkbox"/> High	Authorization to start _____ Date: _____		
(Departmental Sup/WCC/Designee)				

3. Both work requester and service provider contribute to work plan (use attachments for detailed plans)

Work Plan (procedures, timing, equipment, and personnel availability need to be addressed):

This work permit is a an overview for the 2011 shutdown preparation tasks covering generic shutdown work. Where higher risk activities require additional planning and permits, supplemental and specific permits are required and shall be generated by PHENIX Engineering. See attached Check List. See also PHENIX procedures PP-2.5.5.1-01 Rev A, PP-2.5.5.2-02 Rev A, PP-2.5.5.4-25 Rev A, PP-2.5.3.14-10 Rev. A, PP-2.5.5.1-02 Rev A and PP-2.5.5.2-01 Rev A

Note: Copies of listed procedures are available on the PHENIX internal web site in the Engineering and Integration Menu under "Procedures", Section III provides links to ".pdf" files for all procedures to be used in the 2010 shutdown.

Special Working Conditions Required (e.g., Industrial Hygiene hold points or other monitoring)
Refer to attached sheet

Notifications to operations and Operational Limits Requirements: Refer to attached sheet

Post Work Testing, Notification or Documentation Required: Refer to attached shee

Job Safety Analysis Required: ☐ Yes ☒ No

Walkdown Completed (Required): ☒ Yes

Reviewed by: Primary Reviewer signature means that the hazards and risks that could impact ESS&H have been identified, a Walkdown was completed and the hazards will be controlled according to BNL requirements.

Title	Name (print)	Signature	Life #	Date
Primary Reviewer				
ES&H Professional				
Building Manager				
Service Provider				
Work Control Coordinator				
Other				
Review Done: <input type="checkbox"/> in series		<input type="checkbox"/> team		

4. Job site personnel fill out this section.

Note: Signature indicates personnel performing work have read and understand the hazards and permit requirements (including any attachments).

Job Supervisor:		Contractor Supervisor:	
Workers:	Life#:	Workers :	Life#:

Workers are encouraged to provide feedback on ESS&H concerns or on ideas for improved job work flow. Use feedback form or space below.

5. Department/Division Line Manager or Designee

Conditions are appropriate to start work: (Permit has been reviewed, work controls are in place and site is ready for job.)

Name:	Signature:	Life#:	Date:
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6. Worker provides feedback.

Worker Feedback (use attached sheets as necessary)

- a) WCM/WCC: Are there any changes as a result of worker feedback? ☐ Yes ☐ No

Note: See work planning and control subject area section 2.6.

7. Post Job Review/Closeout: Work Control Coordinator (authorizing dept.) checks quality of completed permit and ensures the work site is left in an acceptable condition. (WCC can delegate clean up of work area to work supervisor.) The WCC ensures that the change process to update drawings, placards, postings, procedures, etc. are initiated , if necessary.

Name:	Signature:	Life#:	Date:
Comments:			

PHENIX Start of Shutdown Checklist, 2011

The following standard shutdown tasks are to be performed in precisely the order indicated in accordance with the indicated PHENIX Procedures (where indicated) or otherwise best practices in accordance with BNL standards and training for “worker planned work”, as appropriate. These tasks are to be accomplished in accordance with the latest shutdown schedule as indicated in the current PHENIX technical support weekly planning meeting (see PHENIX Internal web site, systems engineering page for latest information). PHENIX technicians shall make certain that all of their required training is up to date, all equipment requiring certifications and/or calibration is up to date, and that all other equipment and tools are operating within normal operating parameters and in accordance with all BNL, CAD and PHENIX safety requirements.

BNL technicians and engineers shall also make certain that all non-BNL personnel working at PHENIX during the 2011 shutdown are appropriately trained for the tasks they will be performing, that all tasks have been properly reviewed and planned, and that all required permits are in place prior to commencement of such tasks.

The following are the standard start of shutdown tasks and the PHENIX procedures for these tasks. All PHENIX personnel involved in the standard shutdown tasks shall familiarize themselves with the appropriate procedures prior to commencing these tasks. The procedures are linked on the PHENIX internal web site, engineering section

http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL_SSint-page.htm

(Note: You can also find the 2011 shutdown schedule linked on this page.)

1. Immediately after the end of Run 11, open the plug door (PP-2.5.3.14-10) raise the WC access platforms (PP-2.5.5.1-02) and open the east and west carriages (PP-2.5.5.1-01 and PP-2.5.5.2-01).
2. LOTO all PHENIX detector magnets.
3. Place all PHENIX electronics in Summer shutdown safe modes.
4. Purge all flammable gas PHENIX detectors for a minimum of 36 hours.
5. After the full minimum 36 hours of flammable gas purge has been completed, place the PHENIX safety systems in bypass mode.
6. Request removal of radiation interlocks by C-A liaison engineer.

7. Open Large rolling shield wall (PP-2.5.5.2-02)
8. Disassemble large rolling shield wall and base and store for duration of shutdown (C-A liaison engineer to coordinate with riggers).
9. Disconnect EC lift wiring and TOF blower wiring (PHENIX electrician).
10. Fold the EC scaffolding, remove the EC lift and Ladder (C-A liaison engineer to coordinate with riggers and carpenters).
11. Remove the MuID Collar (PP-2.5.5.4-25)
12. Disconnect gas sniffers, water, elect., gas, fibers and RXNP blue cable from EC in preparation for move to AH.
13. Move the EC to the AH. (PP-2.5.5.1-01, PP-2.5.5.2-01)
14. Install IR floor plates over EC openings.
15. Move tracks and 20 ton cart to IR side of EC.
16. Move the MuID collar to the AH.
16. Move C-A manlift to IR side of EC.

Specific tasks for the 2011 shutdown shall be individually evaluated for training requirements, permit requirements and planned in accordance with BNL standard practices.